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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,143	11/04/2003	Steven W. Holland	GP-303630	4840

7590 11/27/2009  
GENERAL MOTORS CORPORATION  
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EXAMINER
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WANG, BEN C

ART UNIT	PAPER NUMBER
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2192

MAIL DATE	DELIVERY MODE
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11/27/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/701,143	<b>Applicant(s)</b> HOLLAND, STEVEN W.	
	<b>Examiner</b> BEN C. WANG	<b>Art Unit</b> 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on September 16, 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

***DETAILED ACTION***

1. Applicant's response dated September 16, 2009 responding to the Final Office action mailed June 3, 2009 provided in the rejection of claims 22-37.

Claims 22-37 remain pending in the application and which have been fully considered by the examiner.

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Applicant's arguments, see pages 1-4, filed September 16, 2009, with respect to the rejection(s) of claim(s) 22-37 under 35 U.S.C. 103(a) as being unpatentable over Knight et al. in view of Coburn, II et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of De Boer, et al. - art made of record, as applied hereto.

***Claim Rejections – 35 USC § 103(a)***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claims 22-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knight et al. (Pub. No. US 2003/0167345 A1) (hereinafter 'Knight-2') in view of De Boer, et al. (Pat. No. US 7,424,707 B2) (hereinafter 'De Boer' - art made of record)

3. **As to claim 22** (Previously Presented), Knight-2 discloses a software management system for use in a vehicle, comprising:

- a portable memory device adapted to store software files and diagnostic information (e.g., [0190] - ... in USB adapter 200 capability for downloading the updated calibration software ... USB adapter 200 may be used to interface remote computers to other vehicle systems ...; page 29, Right-Col., Lines 6-11 – providing a resulting measured voltage value to said PDA via a diagnostic message .... – emphasis added);
- multiple vehicle processors connected to a system bus of the vehicle (e.g., Fig. 1A, elements 102 – Fuel System Control Computer (vehicle processor), 104 – Transmission Control Computer (vehicle processor), 106 – Data Logging Control Computer (vehicle processor), 108 – Communication Network (a system bus of the vehicle); [0141] - ... Vehicle control system includes: fuel system control computer, transmission control computer, data logging control computer, and vehicle communications network ...); and
- a communications port of the vehicle (e.g., Fig. 2, element 202 – USB Controller, Port 1, Port 2, Port 3);

- an interface processor (e.g., Fig. 2, element 204 – CPU; [0152] - ... USB adapter includes: USB controller, central processing unit ...) connected to the communications port and the system bus, wherein the interface processor is adapted to, when the portable memory device (e.g., Fig. 1B, element 112 – USB Device) is connected to the communications port;;
- an external processor having a communications port (e.g., Fig. 1B, element 110 – USB Host; [0149] - ... USB Host may be any computer having a USB host controller, such as a standard PC ...) and adapted to receive the diagnostic information from the portable memory device (e.g., page 29, Right-Col., Lines 6-11 – providing a resulting measured voltage value to said PDA via a diagnostic message .... – emphasis added);
- to transmit diagnostic information received from the multiple vehicle processors to the portable memory device (e.g., Fig. 1B, element 112 – USB Device)
- to analyze the diagnostic information to determine successful software installation on the vehicle (e.g., [0022] - ... the plurality of remote computer comprises vehicle diagnostic software – emphasis added)

Further, Knight-2 discloses an USB adapter and associated communication ports (e.g., Fig. 2; [0152]), associated USB device, and USB Host (e.g., Fig. 1B, elements 110- USB Host, 112 – USB Device), providing a resulting measured result to remote system by USB controller (e.g., P. 29, Left-Col., Lines 50-57), USB adapter capability for downloading the updated software (e.g., [0190]), and to include in USB adapter capability for downloading the updated calibration software from a remote computer to a

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vehicle subsystem computer ... may be used to interface remote computers to other vehicle sub-systems, such as applications involving transmissions, anti-lock braking systems, vehicle management computers, and the like (e.g., [0910] – emphasis added) but does not explicitly disclose other limitations stated below.

However, in an analogous art of *Method for Automatic Updating of Software*, De Boer discloses:

- identify software files stored on the portable memory device for each of the multiple vehicle processors, load the identified software files onto the multiple vehicle processors (e.g., Fig. 2, step 10 – Initialize Software; step 11 - SEND NEW SOFTWARE MOUDLE TO PROCESSOR; Col. 2, Lines 45 - 56 - Due to growing use of processors in an increasing number of systems, e.g., in automotive systems, and due to the ever higher performance levels demanded of these systems, the software in these processor systems (*interpreted as the multiple vehicle processors*) must be updated and/or replaced regularly ...; Col. 4, Lines 16 – 42 - ... for automatically updating software in method step 10, the software on processor 1 is initialized. In method step 11, a new software module is received ... and sent to processor 1 as a data stream (*interpreted as load the identified software files*) ...; Col. 2, Lines 16 – 34 - ... in a vehicle to replace and/or update software for various components in the vehicle ... a bus system may be used .. over which the software modules are then distributed to the individual components ... - emphasis added; NOTE: Knight-2 discloses an USB adapter and associated communication ports (e.g., Fig. 2; [0152]));

- each adapted to generate diagnostic information indicating success of software installation on the respective vehicle processor (e.g., Fig. 2, step 19 – Output Test Result; Col. 2, Line 56 – Col. 3, Line 3 - ... Then new software modules are received .. the functionality of the new software module must be checked, so that the system, the running software does not suffer, i.e., is not damaged by the new software module ... this new software module is tested during operation of the software ... as a function of the result of the test ...; Col. 4, Lines 34 – 37 - .... If it is recognized in method step 14 the outcome of the test was negative, then in method step 18 the variable is set in memory 2 ... in method step 19 the test result is output (*interpreted as to generate diagnostic information*) ... - emphasis added);

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of De Boer into the Knight-2's system to further provide other limitations stated above in the Knight-2 system.

The motivation is that it would further enhance the Knight-2's system by taking, advancing and/or incorporating the De Boer's system which offers significant advantages that the method automatically updating software over the related art that this updating is performed in a way that is shielded from the user during operation by using a test; this prevents, in particular, interruptions in operation during replacement (renewal) of the software as once suggested by De Boer (e.g., Col. 1, Lines 18 – 27)

4. **As to claim 23** (Previously Presented) (incorporating the rejection in claim 22), Knight-2 discloses the system wherein the communications ports of the vehicle and the external processor comprise open architecture communication ports (e.g., Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 – vehicle communications network; [0146] – Vehicle communications network is a collection of one or more computer networks that facilitate communications between network nodes ...)

5. **As to claim 24** (Previously Presented) (incorporating the rejection in claim 23), Knight-2 discloses the system wherein the communications ports of the vehicle and the external processor comprise universal serial bus ports (e.g., Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 – vehicle communications network; Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 – vehicle communications network; [0146] – Vehicle communications network is a collection of one or more computer networks that facilitate communications between network nodes ...), the portable memory device comprises a universal serial bus drive (e.g., Fig. 1B, element 112 – USE Device)

6. **As to claim 25** (Previously Presented) (incorporating the rejection in claim 22), Knight-2 discloses the system wherein the portable memory device stores software files for multiple vehicle types, and the interface processor identifies the software files based at least in part on vehicle type (e.g., [0190] - ... to include in USB adapter capability for downloading the updated calibration software from a remote computer to a vehicle subsystem computer ... may be used to interface remote computers to other vehicle



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sub-systems, such as applications involving transmissions, anti-lock braking systems, vehicle management computers, and the like)

7. **As to claim 26** (Previously Presented) (incorporating the rejection in claim 22), De Boer discloses the system wherein the multiple vehicle processors generate the diagnostic information by automatically performing self-tests on the installed software (e.g., Col. 7, Lines 34-47 - ... If the application software is current and matches the equipment sensors ... if there are any problems with the application software, such as obsolete or incorrect code or version ...)

8. **As to claim 27** (Previously Presented), Knight-2 discloses a vehicle comprising:

- a communications port (e.g., Fig. 2, element 202 – USB Controller, Port 1, Port 2, Port 3);
- multiple vehicle processors connected to a system bus of the vehicle (e.g., Fig. 1A, elements 102 – Fuel System Control Computer (vehicle processor), 104 – Transmission Control Computer (vehicle processor), 106 – Data Logging Control Computer (vehicle processor), 108 – Communication Network (a system bus of the vehicle); [0141] - ... Vehicle control system includes: fuel system control computer, transmission control computer, data logging control computer, and vehicle communications network ...); and
- an interface processor (e.g., Fig. 2, element 204 – CPU; [0152] - ... USB adapter includes: USB controller, central processing unit ...) connected to the

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communications port and the system bus, wherein the interface processor is adapted to, when a portable memory device (e.g., Fig. 1B, element 112 – USB Device) is connected to the communications port:

- identify software files stored on the portable memory device for each of the multiple vehicle processors, load the identified software files onto the multiple vehicle processors (e.g., [0190] - ... to include in USB adapter capability for downloading the updated calibration software from a remote computer to a vehicle subsystem computer ... may be used to interface remote computers to other vehicle sub-systems, such as applications involving transmissions, anti-lock braking systems, vehicle management computers, and the like);
- to transmit diagnostic information received from the multiple vehicle processors to the portable memory device (e.g., Fig. 1B, element 112 – USB Device)

Further, Knight-2 discloses an USB adapter and associated communication ports (e.g., Fig. 2; [0152]), associated USB device, and USB Host (e.g., Fig. 1B, elements 110- USB Host, 112 – USB Device), providing a resulting measured result to remote system by USB controller (e.g., P. 29, Left-Col., Lines 50-57) and USB adapter capability for downloading the updated software (e.g., [0190]), but does not explicitly disclose other limitations stated below.

However, in an analogous art of *Common Platform for Use in Automotive Services*, De Boer discloses:

- adapted to generate diagnostic information indicating success of software installation on the multiple vehicle processors (e.g., Fig. 2, step 19 – Output Test

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Result; Col. 2, Line 56 – Col. 3, Line 3 - ... Then new software modules are received .. the functionality of the new software module must be checked, so that the system, the running software does not suffer, i.e., is not damaged by the new software module ... this new software module is tested during operation of the software ... as a function of the result of the test ...; Col. 4, Lines 34 – 37 - .... If it is recognized in method step 14 the outcome of the test was negative, then in method step 18 the variable is set in memory 2 ... in method step 19 the test result is output (*interpreted as to generate diagnostic information*) ... - emphasis added);

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of De Boer into the Knight-2's system to further provide other limitations stated above in the Knight-2 system.

The motivation is that it would further enhance the Knight-2's system by taking, advancing and/or incorporating the De Boer's system which offers significant advantages the method automatically updating software over the related art that this updating is performed in a way that is shielded from the user during operation by using a test; this prevents, in particular, interruptions in operation during replacement (renewal) of the software as once suggested by De Boer (e.g., Col. 1, Lines 18 – 27)

9. **As to claim 28** (Previously Presented) (incorporating the rejection in claim 27), please refer to claim **23** as set forth accordingly.

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10. **As to claim 29** (Previously Presented) (incorporating the rejection in claim 28), Knight-2 discloses the vehicle wherein the communications port comprises a universal serial bus port (e.g., Fig. 1B, elements 200 - USB Adapter, 110 - USB Host, 108 – vehicle communications network; [0008] - ... a Universal Serial Bus (USB) port)

11. **As to claim 30** (Previously Presented) (incorporating the rejection in claim 27), please refer to claim **25** as set forth accordingly.

12. **As to claim 31** (Previously Presented) (incorporating the rejection in claim 27), please refer to claim **26** as set forth accordingly.

13. **As to claim 32** (Previously Presented), Knight-2 discloses a vehicle software installation method for use in vehicle assembly, comprising:

- an interface processor of a vehicle via a communications port of the vehicle (e.g., Fig. 2, element 204 – CPU; [0152] - ... USB adapter includes: USB controller, central processing unit ...), wherein the interface processor is connected to multiple vehicle processors of the vehicle via a system bus of the vehicle;
- employing the interface processor to identify, for each of the multiple vehicle processors (e.g., Fig. 1A, elements 102 – Fuel System Control Computer (vehicle processor), 104 – Transmission Control Computer (vehicle processor), 106 – Data Logging Control Computer (vehicle processor), 108 – Communication Network (a system bus of the vehicle); [0141] - ... Vehicle control system

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includes: fuel system control computer, transmission control computer, data logging control computer, and vehicle communications network ...), software files on the portable memory device, and to load the software files received over the communications port onto the multiple vehicle processors (e.g., [0190] - ... to include in USB adapter capability for downloading the updated calibration software from a remote computer to a vehicle subsystem computer ... may be used to interface remote computers to other vehicle sub-systems, such as applications involving transmissions, anti-lock braking systems, vehicle management computers, and the like);

- installing the software files on the multiple vehicle processors (e.g., [0190] - ... to include in USB adapter capability for downloading the updated calibration software from a remote computer to a vehicle subsystem computer ... may be used to interface remote computers to other vehicle sub-systems, such as applications involving transmissions, anti-lock braking systems, vehicle management computers, and the like);
- transferring diagnostic information indicating success of software installation from the multiple vehicle processors to the portable memory device via the interface processor (e.g., Fig. 2, element 204 – CPU; [0152] - ... USB adapter includes: USB controller, central processing unit ...)

Further, Knight-2 discloses an USB adapter and associated communication ports (e.g., Fig. 2; [0152]), associated USB device, and USB Host (e.g., Fig. 1B, elements 110- USB Host, 112 – USB Device), providing a resulting measured result to remote

system by USB controller (e.g., P. 29, Left-Col., Lines 50-57) and USB adapter capability for downloading the updated software (e.g., [0190]), but does not explicitly disclose other limitations stated below.

However, in an analogous art of *Common Platform for Use in Automotive Services*, De Boer discloses a portable memory device adapted to store software files and diagnostic information (e.g., Col. 2, Lines 3-6 – A universal serial bus (USB) ... is used for the common platform to communicate with host computer and with the equipment sensors); establishing communication between the portable memory device and an external processor via a communications port of the external processor (e.g., Fig. 2, elements 140 – Host Interface; 110 – Host Computer); and analyzing the diagnostic information via the external processor (e.g., Col. 3, Lines 3-16 - ... The host computer also includes various software for facilitating the functions of equipment sensors ...) to determine success of software installation in the vehicle (e.g., Col. 6, Lines 1-29 - In response to a 'get\_configuration\_status' command ... to return information including the currently loaded application software that is stored in ... equipment sensors 130 ... the equipment sensor can send out identification code (to generate diagnostic information) to the common platform or to the host computer ... Host computer 110 uses this information to determine if all software and hardware components that relate to common platform 120 are up-to-date. In case the software is not up-to-date (indicating success of software installation), common platform executes the "download\_application\_code" routine to download the appropriate software from the host computer 110 to match the hardware ...; Col. 7, Lines 34-47 - ... If the application software is current and matches

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the equipment sensors (*indicating success of software installation*) ... if there are any problems with the application software, such as obsolete or incorrect code or version ...)

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of De Boer into the Knight-2's system to further provide other limitations stated above in the Knight-2 system.

The motivation is that it would further enhance the Knight-2's system by taking, advancing and/or incorporating the De Boer's system which offers significant advantages that common platform provides a plug and play electronic hardware interface between host computer and equipment sensors and can be loaded with different software routines to control different equipment sensors as once suggested by De Boer (e.g., Col. 3, Lines 61 through Col. 4, Line 4)

14. **As to claim 33** (Previously Presented) (incorporating the rejection in claim 32), please refer to claim **23** as set forth accordingly.

15. **As to claim 34** (Previously Presented) (incorporating the rejection in claim 33), please refer to claim **29** as set forth accordingly.

16. **As to claim 35** (Previously Presented) (incorporating the rejection in claim 32), Knight-2 discloses the method further comprising employing a universal serial bus drive as the portable memory device (e.g., Fig. 1B, element 112 – USB Device)

17. **As to claim 36** (Previously Presented) (incorporating the rejection in claim 32), please refer to claim **25** as set forth accordingly.

18. **As to claim 37** (Previously Presented) (incorporating the rejection in claim 32), please refer to claim **26** as set forth accordingly.

### ***Conclusion***

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben C. Wang whose telephone number is 571-270-1240. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ben C Wang/

Ben C. Wang

Examiner, Art Unit 2192

/Tuan Q. Dam/

Supervisory Patent Examiner, Art Unit 2192